

IN THE CLAIMS:

1. (Original) A method of forming a powder and/or discrete gel particles of a compound selected from the group of a metallic oxide, a metalloid oxide, a mixed oxide, an organometallic oxide, an organometalloid oxide, an organomixed oxide resin, and/or an organic resin from one or more respective organometallic precursor(s), organometalloid precursor(s) and/or organic precursors and mixtures thereof; comprising the steps of:
 - i) passing a gas into a means for forming excited and/or unstable gas species;
 - ii) treating said gas such that upon leaving said means the gas comprises excited and/or unstable gas species which are substantially free of electrical charges at a temperature of between 10°C and 500°C;
 - iii) introducing a gaseous and/or liquid precursor which has not been subjected to steps (i) and (ii) into said excited and unstable gas species in a downstream region external to the means for forming excited and/or unstable gas, interaction between said precursor and said excited and unstable gas species resulting in the formation of a powder and/or discrete gelled particles; and
 - iv) collecting resulting powder and/or discrete gelled particles.
2. (Currently Amended) ~~[[A]]~~The method in accordance with claim 1 wherein the means to generate excited and/or unstable gas species is an electrical discharge apparatus.

3. (Currently Amended) [[A]]The method in accordance with claim 1 wherein the liquid precursor is treated by the excited and/or unstable gas species resulting therefrom, in a container.
4. (Currently Amended) [[A]]The method in accordance with claim 3 wherein the container is a fluidised or circulating bed.
5. (Currently Amended) [[A]]The method in accordance with claim 4 wherein the gas comprising excited and/or unstable gas species is utilised as the gas in the fluidised or circulating bed for suspending powders, discrete gel particles and/or droplets of liquid.
6. (Currently Amended) [[A]]The method in accordance with claim 1 wherein the liquid and/or gas precursor is in the form of a liquid compound, a solution of a high viscosity liquid or solid compound in either a liquid carrier or a liquid co-reactive and/or a molten solid.
7. (Currently Amended) [[A]]The method in accordance with claim 6 wherein the liquid precursor is introduced into the excited and/or unstable gas species in the form of an atomised liquid.
8. (Currently Amended) [[A]]The method in accordance with claim 7 wherein the atomised liquid is introduced into the excited and/or unstable gas species by direct injection.
9. (Currently Amended) [[A]]The method in accordance with claim 1 wherein the liquid and/or gas precursor is an organometallic compound of titanium, zirconium, iron, aluminium, indium and tin or mixtures containing one or more thereof.

10. (Currently Amended) [[A]]The method in accordance with claim 1 herein the liquid and/or gas precursor is an organometalloid compound of germanium or silicon.
11. (Currently Amended) [[A]]The method in accordance with claim 10 wherein the organometalloid compound is selected from an organosilane and an inorganic silane where the inorganic groups are selected from halogeno, hydrogeno, or hydroxyl groups, and mixtures thereof.
12. (Currently Amended) [[A]]The method in accordance with claim 11 wherein the organosilane is a functionalised silane containing one or more organic groups selected from the following alkenyl, aryl, H, OH, amino groups, aldehyde groups, alkyl halide groups, alkyne groups, amido groups, carbamate groups, urethane groups, organic salts, carboxylic acid groups and their derivatives, heterorganic groups containing boron atoms and/or phosphorus atoms, mercapto and sulphido groups; grafted or covalently bonded amino acids and/or their derivatives, grafted or covalently bonded proteins, enzymes and DNA.
13. (Currently Amended) [[A]]The method in accordance with claim 10 wherein the organometalloid compound is an organopolysiloxane having a viscosity of from 0.65 to 1000 mPa.s.
14. (Currently Amended) [[A]]The method in accordance with claim 1 wherein the gaseous and/or liquid precursor is an organic compound or a mixture of organic compounds or a mixture of organic and organosilicon compounds.
15. (Currently Amended) [[A]]The method in accordance with claim 1 wherein subsequent to preparation, said powder and/or discrete gelled particles are treated on

- one or more occasions with an excited and/or unstable gas species and/or one or more functionalising precursors.
16. (Currently Amended) A powder and/or discrete gel particles of a compound selected from the group of a metallic oxide, a metalloid oxide, a mixed oxide, an organometallic oxide, an organometalloid oxide, an organomixed oxide resin, and/or an organic resin, obtainable obtained in accordance with the method of claim 1.
 17. (Currently Amended) [[A]]The powder and/or discrete gel particles in accordance with claim 16 having a particle size of from 1nm to 2000 μ m.
 18. (Currently Amended) [[A]]The powder and/or discrete gel particles in accordance with claim 16 comprising an organosilicone resin having the following empirical formula:-



where each R''' is independently an alkyl, alkenyl, aryl, alcohol, H, OH, amino groups, aldehyde groups, alkyl halide groups, alkyne groups, amido groups, carbamate groups, urethane groups, biochemical groups, biochemical species, organic salt based groups, carboxylic acid groups and their derivatives, organic groups containing boron atoms and phosphorus and sulphur containing groups.

and wherein

$$w+x+p+z=1 \text{ and } w<0.9, x<0.9, p+z>0.1.$$

19. (Currently Amended) [[A]]The powder and/or discrete gel particles in accordance with claim 16 comprising an organic resin.
20. (Previously Presented) An apparatus for making powders or discrete gel particles by the method of claim 1 comprising a means for generating an excited and/or unstable gas species (1), a means adapted to introduce a gaseous and/or liquid precursor (50a, 50b) which has not been subjected to steps (i) and (ii) into said excited and unstable gas species in a downstream region (11) external to the means forming excited and/or unstable gas species (1), and a means for collecting resulting powder and/or discrete gelled particles (52, 54).
21. (Currently Amended) [[A]]The apparatus in accordance with claim 20 wherein said apparatus forms a part of a fluidised or circulating bed (20).
22. (Currently Amended) [[A]]The apparatus in accordance with claim 20 wherein the means adapted to introduce a gaseous and/or liquid precursor (50a, 50b) is an atomiser.
23. (Currently Amended) [[A]]The apparatus in accordance with claim 20 wherein the collection of the resulting powders and/or discrete gel particles is made by bringing them into contact with a liquid material thus providing a means of directly formulating the powder and/or discrete gel particles into products for specific applications.
24. (Currently Amended) [[A]]The apparatus in accordance with claim 20 wherein the means for generating an excited and/or unstable gas species (1) is an electrical discharge assembly.

25. (Previously Presented) Use of a powder and/or discrete gel particles in accordance with claim 16 in optoelectronics, photonics, flexible electronics, optical devices, transparent electrically conductive films, displays and solar cells or as thermally conductive fillers, biotechnology, biosensors, detergents, filtration, and or separation applications.